



# **SNS COLLEGE OF ENGINEERING**

Kurumbapalayam (Po), Coimbatore – 641 107



## **An Autonomous Institution**

Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

**DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY**

## **DATA STRUCTURES**

### **Lesson 1**

### **Introduction**

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## Issues

- Time-Consuming Dressing
- Forgetting Items
- Damaged Clothes





## Ideas

- Clothing Categories
- Accessory Storage
- Seasonal Rotation



## With the new organized approach

- Efficient Access
- Time-Saving
- Maintaining Clothes





# What is Data Structures?



Data Structure is a specific way of organizing data elements such as (numbers, characters, or objects) so that they can be stored and manipulated efficiently within a computer's memory.



# Why we need Data Structures?



Every program or software relies on two main things:

**Data:** Data is the information that the program needs to work with, like numbers, text, or images.

**Algorithms:** Algorithms are the step-by-step instructions that tell the program how to process the data.



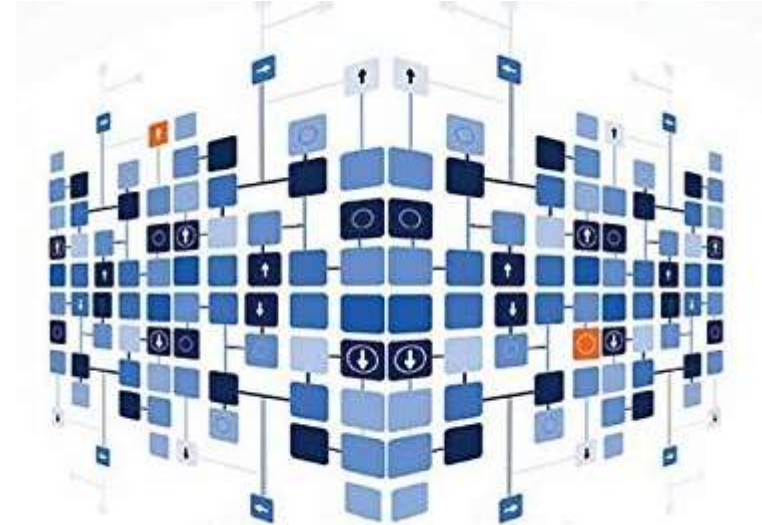




# Importance of Data Structures



Data structures are essential as they enable optimized organization and manipulation of data, leading to efficient algorithms and improved software performance.





## How are data structures used?



Data structures handle four main functions for us:

- Inputting information
- Processing information
- Maintaining information
- Retrieving information





## PUZZLE

Imagine you have a box filled with various types of candies, including chocolates, gummy bears, and lollipops. However, the candies are all jumbled up together, making it hard to find a specific type of candy quickly.

To solve this candy chaos, you decide to organize the candies using a special method. You create separate compartments within the box for each type of candy. Now, chocolates are in one section, gummy bears in another, and lollipops in a third section.

**Question:**

What does this puzzle with the box and compartments represent in the context of computing?

## THANK YOU